

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims

1. (Original) A management apparatus for managing a storage network having a computer, a storage device and a switch, comprising:
 - a controller, an interface connected to said switch and an input interface to be used by an administrator,
 - wherein when said computer or said storage device is connected to said switch:
 - based on information of first and second identifiers of said computer or said storage device acquired via said interface from said computer or said storage device connected to said switch, information of a correspondence relation acquired from said switch via said interface between said second identifier of said computer or said storage device connected to said switch, and a third identifier for identifying an interface of said switch connected to said computer or said storage device, and information regarding said first identifier for identifying said computer or said storage device constituting a predetermined group entered by said administrator via said input interface, said third identifier of said switch belonging to said predetermined group is specified; and
 - in response to inputting of information of a storage area of said storage device and information regarding said first identifier of said computer which can use said storage area, from said input interface, the input information is sent to said storage device to instruct security configuration, information of said third identifier of said switch corresponding to said first identifier and information of said predetermined group to which said third identifier belongs is derived, and the derived information is sent to said switch to instruct configuration of a virtual LAN corresponding to said predetermined group.
2. (Original) A management apparatus according to claim 1, wherein said first identifier is an Internet protocol (IP) address, said second identifier is a MAC address, said

third identifier is a port ID, and the information regarding said first identifier is a subnet address.

3. (Original) A management apparatus according to claim 2, wherein said MAC address is acquired by sending an ARP command to said computer, and the correspondence relation between said MAC address and said port ID is acquired by issuing a Get command of SNMP from said switch.

4. (Original) A management apparatus according to claim 3, wherein connection of said computer to said switch is detected upon reception of an SLP packet from said computer connected to said switch.

5. (Original) A management apparatus according to claim 1, wherein the contents of an instruction given to said switch is an instruction to add said third identifier to the virtual LAN corresponding to said predetermined group.

6. (Original) A management apparatus according to claim 5, wherein if the virtual LAN corresponding to said predetermined group is not configured in said switch, the contents of the instruction is an instruction to generate a new virtual LAN corresponding to said predetermined group.

7. (Original) A management apparatus according to claim 6, wherein when said computer or said storage device is disconnected from said switch, said switch is instructed to delete said third identifier corresponding to said disconnected computer or said disconnected storage device from the virtual LAN corresponding to said predetermined group to which said disconnected computer or said disconnected storage device belongs.

8. (Original) A management apparatus according to claim 7, wherein if said third identifier corresponding to said disconnected computer or said disconnected storage device is

deleted from said virtual LAN corresponding to said predetermined group and if said computer or said storage device belonging to said predetermined group is lost, said switch is instructed to delete said virtual LAN itself.

9. (Original) A switch connectable to a computer and a storage device, comprising:
a controller, an interface connected to said storage device or said computer and an input interface to be used by an administrator,

wherein when said computer or said storage device is connected to said interface:

in accordance with information of first and second identifiers of said computer or said storage device acquired via said interface from said computer or said storage device connected, information of a correspondence relation possessed by said switch between said second identifier of said computer or said storage device connected to said switch, and a third identifier for identifying an interface of said switch connected to said computer or said storage device, and information regarding said first identifier for identifying said computer or said storage device constituting a predetermined group entered by said administrator via said input interface, said controller identifies said third identifier corresponding to said computer or said storage device belonging to said predetermined group; and

in response to inputting of information of a storage area of said storage device and information regarding said first identifier of said computer which can use said storage area, from said input interface, input information is sent to said storage device to instruct security configuration, information of said third identifier corresponding to said first identifier and information of said predetermined group to which said third identifier belongs is derived, a virtual LAN corresponding to said predetermined group is configured.

10. (Original) A storage device connectable to a switch connected to a computer, comprising:

a controller, an interface connected to said switch, an input interface to be used by an administrator and a storage area,

wherein when said computer is connected to said switch:

based on information of first and second identifiers of said computer acquired via said interface from said computer connected, information of a correspondence relation acquired from said switch via said interface between said second identifier of said computer connected to said switch and a third identifier for identifying said interface of said switch connected to said computer, and information regarding said first identifier for identifying said computer constituting a predetermined group entered by said administrator via said input interface, said third identifier corresponding to said computer belonging to said predetermined group is identified; and

in response to inputting of information of said storage area and information regarding said first identifier of said computer which can use said storage area, from said input interface, security configuration is performed, information of said third identifier corresponding to said first identifier and information of said predetermined group to which said third identifier belongs is derived, and said switch is instructed to configure a virtual LAN corresponding to said predetermined group.

11. (Original) A management method for managing a storage network having a computer, a storage device and a switch, comprising the steps of:

when said computer or said storage device is connected to said switch:

based on information of first and second identifiers of said computer or said storage device acquired from said computer or said storage device connected to said switch, information of a correspondence relation acquired from said switch between said second identifier of said computer or said storage device connected to said switch, and a third identifier for identifying an interface of said switch connected to said computer or said storage device, and information regarding said first identifier for identifying said computer and said storage device constituting a predetermined group, specifying said third identifier corresponding to said computer or said storage device belonging to said predetermined group; and

based on information of a storage area of said storage device and information regarding said first identifier of said computer which can use said storage area, performing security configuration by said storage device, extracting information of said third identifier

corresponding to said first identifier and information of said predetermined group to which said third identifier belongs, and creating through said switch a virtual LAN corresponding to said predetermined group.

12. (Currently Amended) A management method for a storage system having a storage device, a switch and a computer respectively connected by a network, comprising the steps of:
based on setting an identifier of a storage area of said storage device and a first address of said computer, performing access control configuration relative to the identifier of said storage area for said storage device; and converting the first address of said computer into a second address, converting the second address of said computer into an identifier of a port of said switch connected to said computer, and adding the identifier of said port to a virtual LAN for said switch.

13. (Currently Amended) A management method for a storage system having a storage device, a switch and a computer respectively connected by a network, comprising the steps of:
based on setting an identifier of a storage area of said storage device and a first address of said computer, performing access control configuration for said computer relative to said storage area by said storage device; and
converting the first address of said computer into a second address, converting the second address of said computer into an identifier of a port of said switch connected to said computer, and adding the identifier of said port to a virtual LAN for said switch.